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MASSACHUSETTS ENVIRONMENT:
The State of Our Common Wealth

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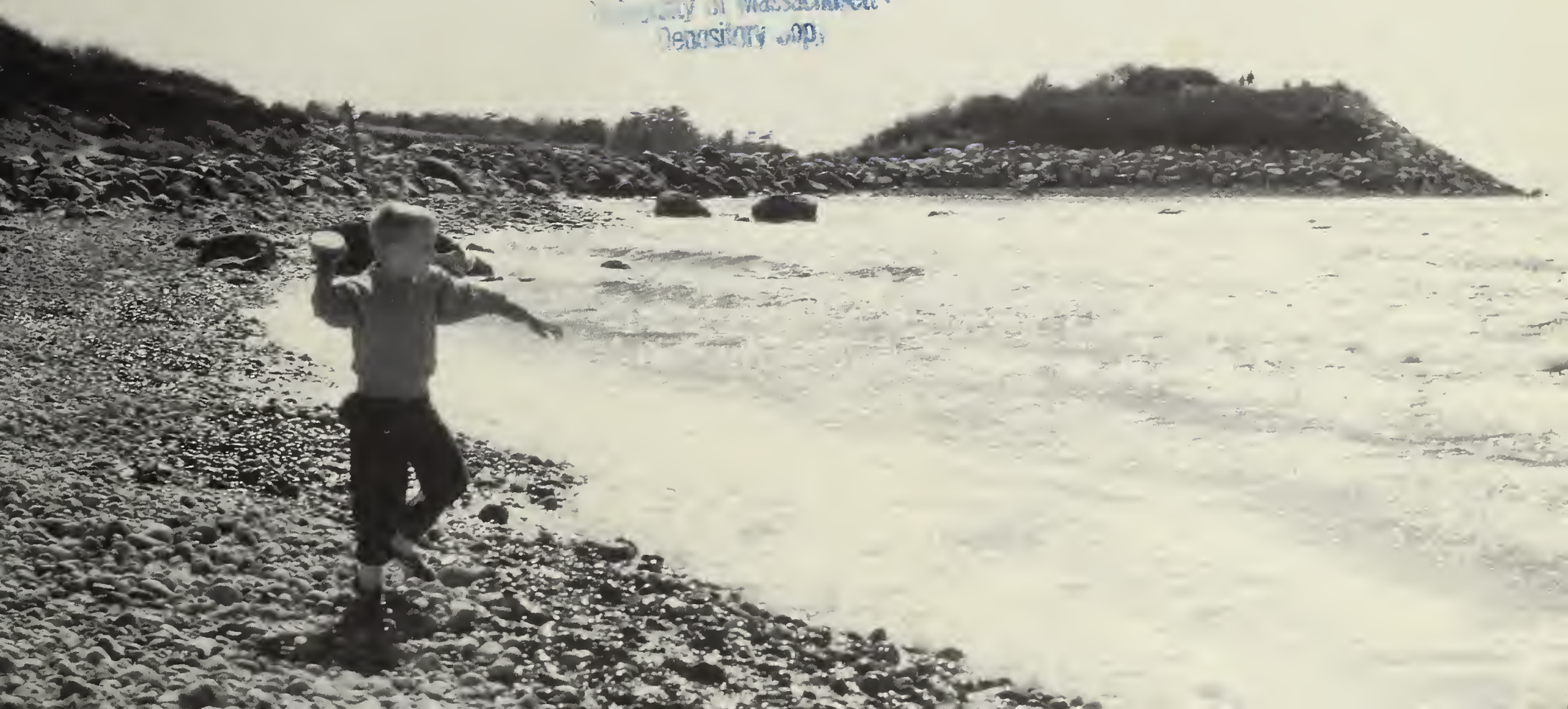

Commonwealth of Massachusetts
William F. Weld, Governor
Argeo Paul Cellucci, Lt. Governor

Executive Office of Environmental Affairs
Trudy Coxe, Secretary

Credits:

This report was produced by the Executive Office of Environmental Affairs in cooperation with the state environmental agencies: Department of Environmental Protection; Department of Environmental Management; Department of Fisheries, Wildlife and Environmental Law Enforcement; Department of Food and Agriculture; Metropolitan District Commission; Massachusetts Coastal Zone Management; and the Massachusetts Water Resources Authority

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The nation does well if it treats its natural resources as assets which must be turned over to the next generation increased, not impaired in value.

President Theodore Roosevelt

Our challenge is to ensure that our children's lives can be as full and rewarding as the lives of their parents and grandparents. I want my grandchildren to be able to splash around in our rivers and streams.

Governor William F. Weld

Commonwealth of Massachusetts
Executive Office of Environmental Affairs

April 22, 1995

Dear fellow environmentalist:

The Executive Office of Environmental Affairs is proud to present Massachusetts Environment: The State of Our Common Wealth.

As you will see in the following pages, we have made great strides in land protection, species recovery, waste reduction, clean water protection and the restoration of clean air.

Massachusetts has a long history of concern for our environment and the protection of our rich natural resources. Under the leadership of Governor Weld and Lt. Governor Cellucci, the Executive Office of Environmental Affairs has worked diligently to develop three major signposts to guide us on the road ahead. They are: real resource protection; streamlined regulations for more effective protection, with less process; and "green business" development.

We have many challenges ahead as we plan for future growth and sustainable development. The signposts that we establish on this 25th celebration of Earth Day will guide us as we make the decisions that will shape our future.

Oliver Wendell Holmes said "The great thing in this world is not so much where we stand, as in what direction we are moving." Only by working together can we move forward toward an attainable and sustainable future.

Environmental protection is not simply a matter of acting in our own self-interest. Our children and their children have every reason to expect that they will inherit the natural resources that we enjoy. By our actions today, as public servants and committed citizens, we are preserving the future for generations to come.

Cordially,

Trudy Coxe

Introduction

A clean and healthful environment in Massachusetts is fundamental to the quality of our lives. Voters said exactly that in 1972 when they approved a Constitutional amendment giving the people the "right to clean air and water ...and the natural, scenic, historic, and aesthetic qualities of their environment."

Today, citizens exercise that right through the mission and work of the Executive Office of Environmental Affairs (EOEA) and its agencies: the Department of Environmental Management (DEM); the Department of Environmental Protection (DEP); the Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE); the Department of Food and Agriculture (DFA); the Metropolitan District Commission (MDC); the Massachusetts Coastal Zone Management office (MCZM); the Massachusetts Environmental Policy Act unit (MEPA); and the Office of Technical Assistance (OTA).

While environmental agencies and laws are in place to fulfill our right to a clean and wholesome environment, government cannot get the job done alone. The daily habits and choices of citizens have major environmental significance. Along with our right to a clean environment comes a personal responsibility for maintaining and improving the quality of our air, water and land resources. To do that, we need to know what shape they are in and what we can do to make a difference.

In these pages, EOEA offers a status report on efforts to maintain and improve our environment. It also identifies important challenges that lie ahead and suggests areas where each one of us can individually make a difference in improving environmental quality.

Ecosystems, like economic systems, are complex. Even so, most of us can accurately describe economic conditions: how things are going overall, whether we're in recession, and how the economy is affecting our personal lives. But we seem less able to describe how our environment is faring, whether it is deteriorating or stable, and how our personal decisions affect the environment.

Sometimes people aren't sure how safe and clean the environment is because they receive conflicting or inconsistent information. It has been suggested in some quarters that the condition of the environment is no longer a major problem and that our society is environmentally overregulated. Yet it seems that every week we hear or

read about another environmental threat — depleted or contaminated fisheries, polluted drinking water, the dangers of radon, or a hazardous waste site just discovered. With these conflicting messages, it's no wonder citizens find it difficult to tell whether the environment is getting better or worse.

In some areas, such as reducing air and water pollution from industrial plants and utilities, we've seen dramatic progress. In other areas, however, such as meeting the standards of fishable and swimmable waterways or curbing smog across the state, we still have a long way to go.

Environmental indicators show that long-standing pollution control measures targeting large commercial, industrial, and municipal facilities have done a fairly good job. Much of this progress, though, has come from traditional "end of the pipe" regulations that treat wastes before they are released into the environment. Now, we are finding that it often makes more sense — not only environmentally, but also economically — to prevent pollution from occurring in the first place. This fundamental change in approach, reflected in pioneering programs like the Massachusetts Toxics Use Reduction Act and the Watershed Lands Acquisition Program, today guides action throughout EOEA.

Indicators also tell us that cleaner air, water, and land must come from efforts to cut pollution from smaller, less obvious, more diffuse sources: household hazardous wastes, cars and trucks, and runoff from roads and parking lots, failing septic systems, landfills and lawn chemicals. Individual citizens, by making seemingly small choices, stand to make the next big difference for environmental quality.

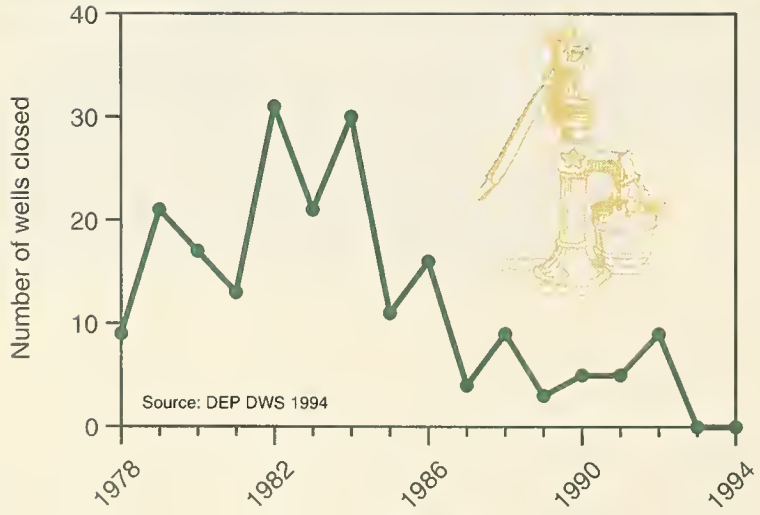
This report is presented in the following chapters: Water, Air, Land and Open Space, Wildlife, Waste, and Serving the Citizen — highlights of the state's environmental protection effort. As you read these pages, please consider the suggestions and resources offered to help you take positive action at home, in your community, and at work. At the same time, we encourage you to discover and enjoy the wealth of natural and recreational resources that make Massachusetts a very special place in which to live. ◆

WATER

Massachusetts has nearly 2,900 lakes and ponds covering about 150,000 acres; some 2,000 rivers and streams flowing 8,200 miles; 810,000 acres of medium- and high-yield aquifers underlying about a sixth of the state; 590,000 acres of wetlands covering about a tenth of the state; and more than 1,500 miles of capes, coves, and estuaries that make our coast longer than California's.

These resources are interconnected regionally within 27 separate watersheds — land areas which drain into a common waterbody, such as a river, lake, or ocean — and play a critical role in the quality of our lives. We depend on clean water for drinking, for farming, fishing and industry, for a host of irreplaceable ecosystems and wildlife habitats, and for endless days of recreation from the Berkshires to the beaches.

Annual Public Water Well Closures Due to Contamination



Many of our waters are far cleaner than they were two decades ago. Since passage of the federal Clean Water Act in 1972, Massachusetts, its cities and towns, and the federal government have invested $3 billion in wastewater treatment; industry has made huge private investments as well. Although municipal and industrial wastewater discharges (known as point source pollution) continue to threaten water quality in some places, other problems — such as sewer overflows, urban and agricultural runoff, and failing septic systems — today present more significant challenges. This pollution comes from diffuse sources, rather than a pipe, and is called nonpoint source pollution.

On Tap

Few things are as important as clean drinking water. About 60 percent of us get our water from surface supplies — lakes, ponds, and reservoirs. The rest of us rely on groundwater, supplied through municipal and private wells. Nearly 400,000 citizens are served by their own wells.

Massachusetts has one of the cleanest water supplies in the country. More than 99 percent of our public drinking water supplies meet the quality standards set by the Safe Drinking Water Act.

But the threats are numerous, and there is a need for constant vigilance. Groundwater supplies can be contaminated by oil and gasoline, cleaning solvents, pesticides, leakage from unlined landfills, and road salt. The single biggest risk is posed by leaking underground fuel storage tanks. To protect groundwater supplies, more than half of the state's 351 cities and towns have adopted wellhead protection measures, such as zoning, to keep inappropriate land uses away from wells.

About 130 wells were closed during the period from 1980 - 1989; only 16 more have been closed since then. In 1994 no additional wells were closed because of contamination.

Rivers and Lakes

Rivers and lakes are rated under the federal Clean Water Act according to intended uses, such as drinking water, recreation, and irrigation. Class A waters — about 11 percent of Massachusetts rivers and lakes — are high quality public water supplies. Class B waters may provide public water supplies, fish habitat, recreation, and irrigation.

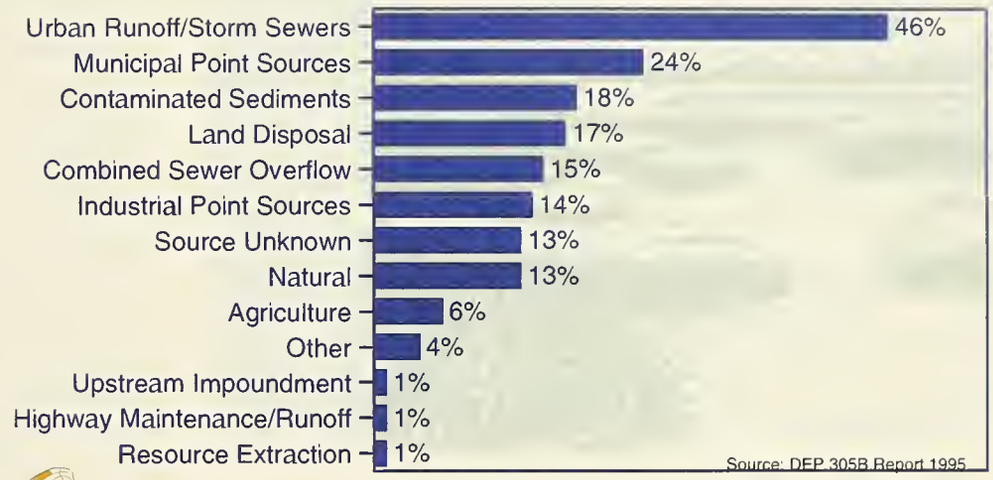
The water quality of our rivers has improved substantially. Major problems once caused by pollutants such as oxygen-depleting compounds, ammonia, and chlorine have been virtually eliminated. Largely because of the massive investments in wastewater treatment over the last 20 years, the impact of municipal and industrial discharges has been dramatically reduced.

But much work remains to be done. Sewer overflows and more diffuse pollutants in urban and agricultural runoff continue to pose serious problems. Data on the lower Charles and Mystic rivers near Boston show that, despite huge reductions in point source pollution from industry, utilities, and sewage treatment plants, persistent nonpoint sources, primarily stormwater runoff, keep these and other waterways from meeting the fishable/swimmable standard.

Although regular water testing indicates that toxic pollutants are not a major pollution source in rivers, contaminated sediments in riverbeds — a legacy of decades of pollution — can still affect the food chain. In 42 rivers, lakes and ponds, fish contamination is serious enough to warrant fish consumption advisories.

Lakes are affected in many of the same ways as rivers. The most recent data show that about 48 percent of assessed lake acres are fully fishable and swimmable. The primary problems in lakes are dense beds of aquatic plants, especially nonnative plants such as the Eurasian Milfoil; algae; high concentrations of nutrients such as phosphorous which contribute to plant growth; low water transparency; and a lack of oxygen. Polluted surface runoff and discharges from failing septic systems are major causes of these problems.

Sources of Pollution in Rivers and Streams



Wetlands

Wetlands are low-lying areas where water collects and saturates the ground. The state's wetlands provide important benefits: helping to clean drinking water supplies by filtering and absorbing pollution, protecting adjacent areas from flooding, and supplying food (especially fish and shellfish), wildlife habitat, and recreational opportunities.

Wetlands exist in every community and take many forms: beaches, bogs, dunes, marshes, swamps, and wet meadows. In the course of its history, about a third of the Commonwealth's wetlands have disappeared; about 590,000 acres remain. Illegal and incremental filling are the most significant threats to wetlands today.

Wooded Swamp

The Coast

The coastal environment is one of our most valuable natural and economic resources, providing livelihoods, transportation, and recreation for Massachusetts citizens and visitors. Commercial fishing was until recently a billion-dollar-a-year industry; its future depends upon a clean and ecologically balanced marine environment.

Water quality sampling done close to shore shows that 55 percent of assessed marine waters do not support their designated uses. However, this sampling is concentrated in areas where pollution is most serious — such as Boston Harbor, Buzzard's Bay and the North Shore drainage areas — and does not typify most of the state's 1,500 miles of coastal waters. There is clear evidence of improvement elsewhere. The MDC routinely tests its beaches for coliform bacteria and closes them when contamination is too high. The number of times the MDC has had to close salt water beaches has been cut in half over the last five years.

One of the most difficult challenges facing Massachusetts harbors and ports is the dredging and disposal of sediment. Many of our major shipping channels are clogged with sediment — much of it contaminated — that reduces navigability. Urban harbors — especially in Boston, Salem, New Bedford, and Gloucester — have for decades been a convenient repository of industrial and human wastes. With an economy that relies upon navigable waterways to the sea for fishing and commerce, Massachusetts must find environmentally and economically acceptable ways to dredge and dispose of its harbor sediments.

The Boston Harbor Cleanup

After years of neglect, the Massachusetts Water Resources Authority (MWRA) is constructing new sewage treatment facilities that will make Boston Harbor cleaner than it has been in more than a century.

In 1991, water quality improved dramatically as the MWRA began shipping sludge that once was dumped into the harbor to its new sludge-to-fertilizer plant for processing. Rehabilitation of the existing sewer system has resulted in improved system performance and a significant decrease in sewer overflows during storms. And an aggressive toxics reduction program has significantly reduced the levels of toxic chemicals in wastewater. With fewer contaminants, the incidence of disease in winter flounder, an important bellwether of water quality problems, has dropped. At Deer Island, concentrations of organic contaminants measured in mussels have also decreased.

In 1994, the first phase of the new primary treatment plant began operation, and will be followed by the first portion of secondary treatment in 1996. In addition to the higher levels of treatment, the completion

of a nine mile long outfall tunnel for the discharge of treated effluent will improve the health of Boston Harbor, without negatively impacting Massachusetts and Cape Cod Bays.

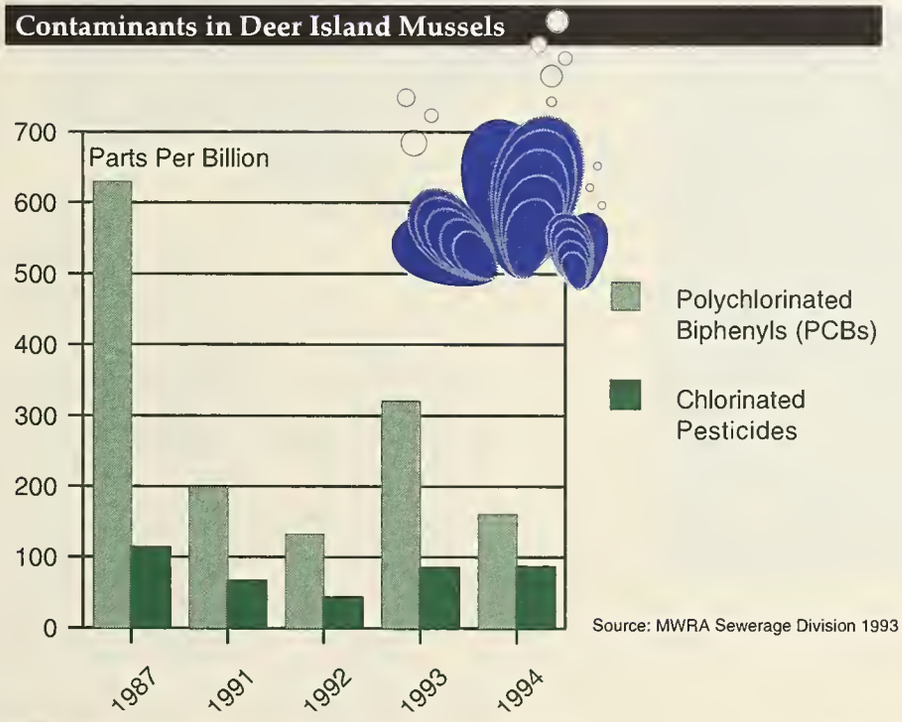
Future Challenges

- Develop a watershed approach to environmental planning and decision making, with government officials and citizens working together to assess problems over entire watersheds and to prioritize nonpoint and point source pollution controls.
- Achieve passage of the Rivers Protection Act to help retain protected buffer areas next to rivers and streams to reduce sources of nonpoint pollution.
- Find environmentally sound ways of disposing of contaminated sediment from ocean dredging projects.
- Ensure no net loss of wetlands in the Commonwealth, and strive for net gains through wetlands restoration efforts.

How You Can Make a Difference

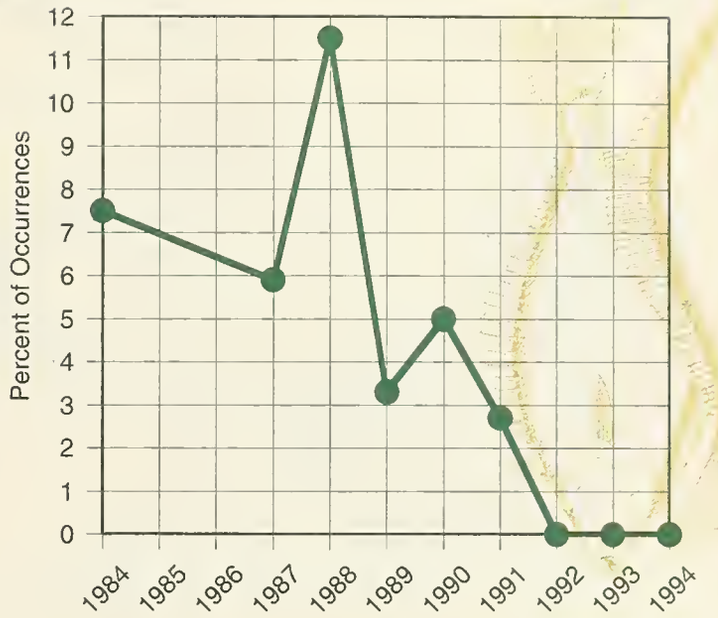
- Get involved and support environmental groups that advance clean water and pollution prevention initiatives.
- Inspect and maintain your septic systems regularly; upgrade improperly functioning systems; avoid phosphate detergents and septic system additives.
- Minimize or eliminate the use of lawn and garden chemicals by preserving native vegetation and using integrated pest management techniques such as: disease- and insect-resistant plants, nontoxic insecticidal soaps or biodegradable insecticides made from plant extracts, and organic fertilizers made from natural plant and animal material or mined rock minerals (look for products labeled "natural organic", "slow release", and "low analysis").
- Recycle waste oil by returning it to service stations that offer recycling services or to the store where you bought it; do not discard used oil with trash or pour it down drains. Fix automotive oil and fluid leaks.
- Pick up after your pet and dispose of wastes by flushing down the toilet.
- Conserve water by installing low-flow showerheads, faucet aerators and water saving devices for toilets; minimize outdoor watering.
- To reduce leaching of lead from house pipes, if tapwater has been standing for six hours or more, let the water run until as cold as possible (but save that water for other uses such as watering plants or washing). ◆

Contaminants in Deer Island Mussels



Source: MWRA Sewerage Division 1993

Liver Tumors in Winter Flounder Off Deer Island



Source: MWRA 1995

Air

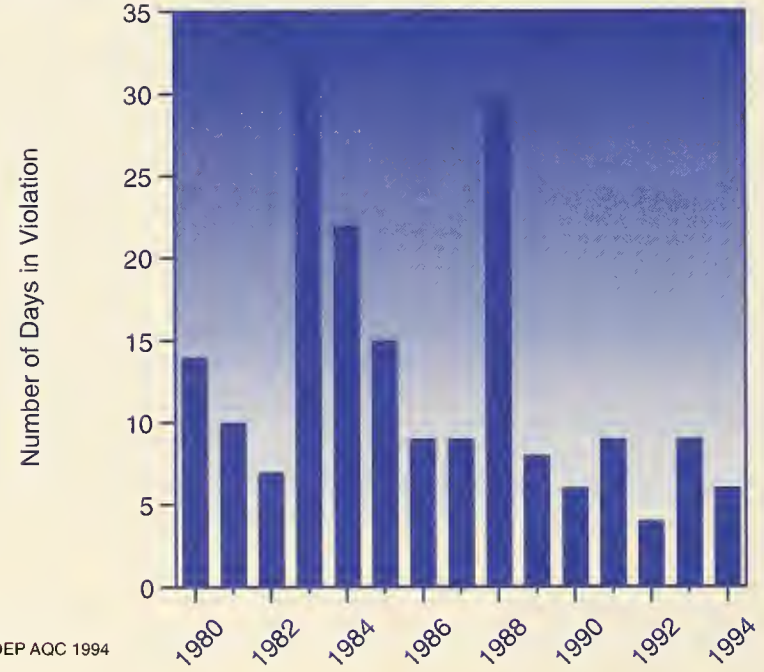
Air pollution is a serious environmental health risk. Often invisible, air pollutants create smog and acid rain. Certain air pollutants are depleting the Earth's protective upper-atmosphere, allowing more damaging sun rays to get through, and warming the global climate. Airborne toxic substances can pose additional risks.

Every day, we each breathe about 20,000 liters of air and the pollutants the air carries — pollutants that can cause respiratory and circulatory problems, headaches, fatigue, eye irritation, and increased risk of cancer and neurological damage.

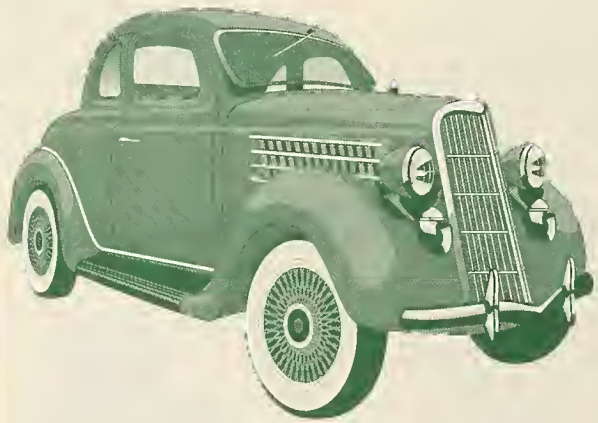
Every summer, Massachusetts citizens are subjected to days of unsafe smog (also called ground-level ozone). Smog, which can irritate the eyes, make breathing difficult, and worsen chronic respiratory ailments, forms when volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) combine in the presence of sunlight on warm days. VOCs come from solvent and paint evaporation, and car, truck, boat and plane emissions. NO_x comes predominantly from car and truck exhaust as well as the smokestack emissions of industries and utilities. Smog reduces plant growth, and thus the productivity of forests and crops and eats away stone and metal, damaging buildings, monuments and statues.

Most people associate air pollution with cities and their concentrations of smokestacks and tailpipes. In fact, many types of air pollution are carried by the wind from state to state, and are harmful to people and the environment all along the way, even in rural areas.

Smog Violations Since 1978



Source: DEP AQC 1994



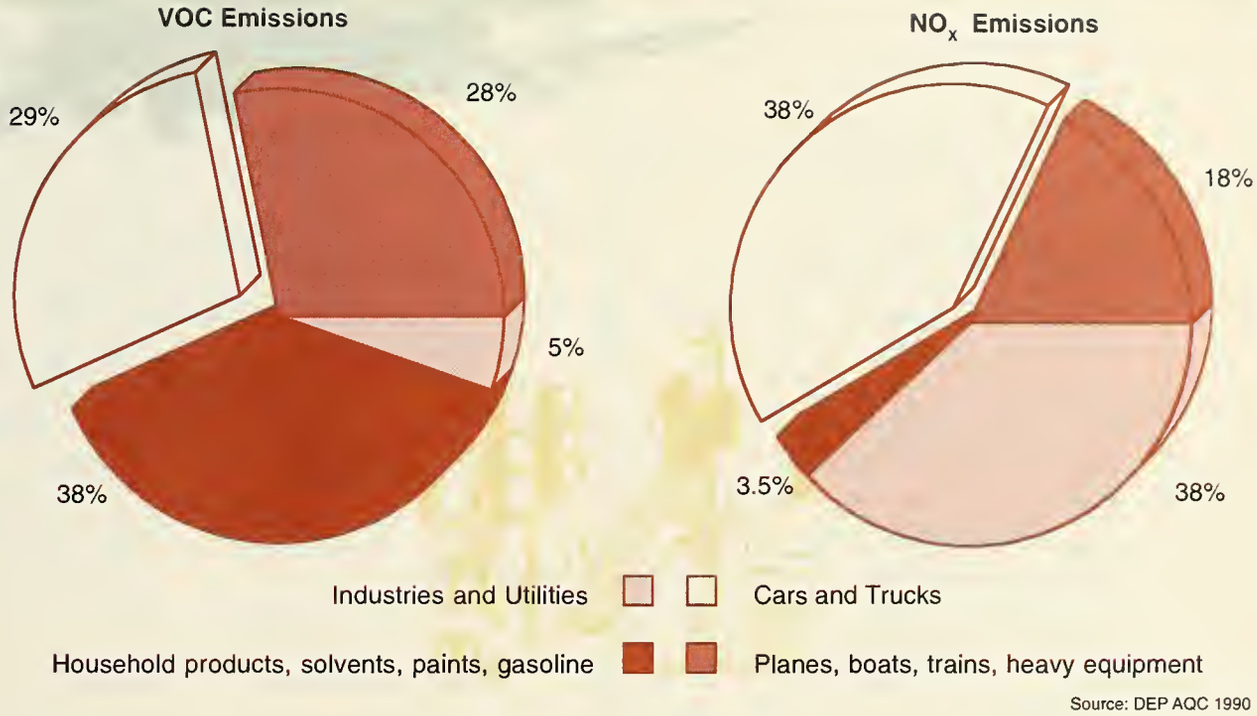
Important progress has been made. The number of days in which the health standard for smog is violated has decreased significantly over the past decade. And not a single violation of the carbon monoxide standard has been detected in Boston since 1986. But those signs of progress don't mean our work is done. More still needs to be done to make sure that our air becomes truly clean and — just as importantly — stays that way.

In fighting air pollution, state regulators traditionally have targeted large industrial facilities and power plants. These efforts have proved so successful over the years that now automotive emissions, not factory smoke, is the single largest source of air pollution in Massachusetts. Today, moves toward cleaner cars are the most cost-effective route to cleaner air. That's why major elements of the Commonwealth's new air cleanup plans focus especially on mobile sources.

Coping with Cars

Newer, cleaner cars on Massachusetts roads in recent years have helped our air quality, but these benefits have been reduced by the extra miles we're driving every year. The mileage we drive has increased 17 percent in the last decade, and is expected to increase another 10 percent by 2005. More of us are living farther away from our jobs, and sprawl proliferates as development continues far from the effective reach of public transportation. The Massachusetts strategy for fighting car pollution has three key components:

Where VOC and NO_x Emissions Come From (1990 data)



Source: DEP AQC 1990

Cleaner Vehicles and Fuels

Besides California, ours is the first state to adopt tough Low Emission Vehicle (LEV) standards. Since October of 1994, all automobiles sold in Massachusetts have met these cleaner tailpipe standards. By 1998, the LEV program will also require that at least two percent of the vehicles sold have no tailpipe emissions, e.g. electric cars. Cleaner, reformulated gasoline and low-sulfur diesel fuel are also available now to make all vehicles, new and old, run cleaner.

Enhanced Inspection and Maintenance Program

To keep all vehicles running efficiently and cleanly, an improved automobile Inspection/Maintenance program is being designed. In the coming year, new, more sophisticated, and more accurate tests will be performed at facilities outfitted with the latest equipment and procedures.

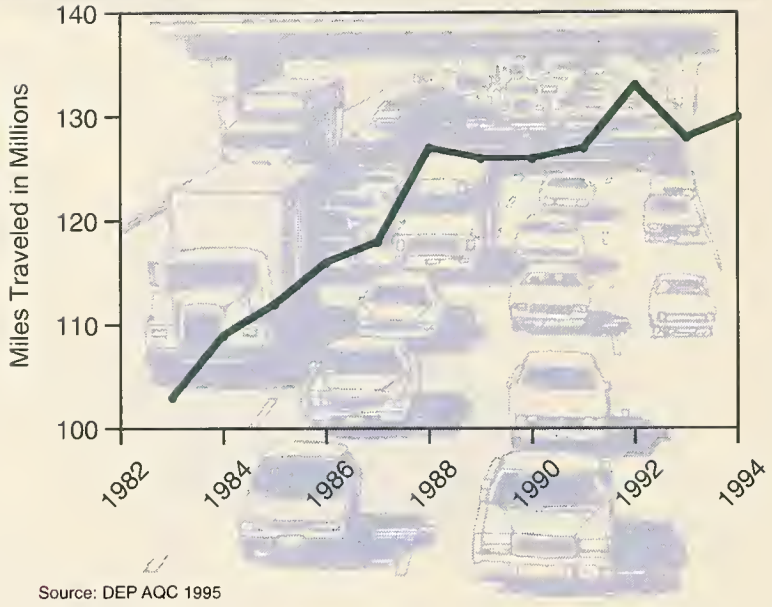
Reducing Miles Driven and Vehicle Trips

Slowing the growth in vehicle miles traveled is another key strategy. State transportation and environmental agencies are committed to providing appealing transportation options for citizens: expanded commuter rail lines and bus routes, more commuter park-and-ride spaces, and more carpool lanes on our highways, and improved facilities for pedestrians and bicyclists.

Other key measures include:

- Reformulation of household cleaners, paints and stains to reduce emissions of VOCs.
- New controls to reduce emissions from auto body painting operations, sewage treatment plants and landfills.
- Stricter controls to further cut emissions from large utilities and factories.

Motor Vehicles Traveling More Miles



Source: DEP AQC 1995

Global Warming & Climate Change

Global warming and climate changes are, in all likelihood, occurring at an accelerating rate. In Massachusetts, we release 89.9 million tons of "greenhouse gases" per year including carbon dioxide (from burning fossil fuel), methane (from landfills and livestock), and other chemicals. Climatic change could raise global temperatures, make storms more violent and more frequent, melt parts of the polar ice cap, and cause rising sea levels and coastal flooding. A moderate three to five degree increase in temperature over time would cause two-thirds of New England's current coastal wetlands to be inundated. Such a change would also put large low-lying portions of Boston and other coastal communities under water. Massachusetts will launch a climate change study by the end of 1995.

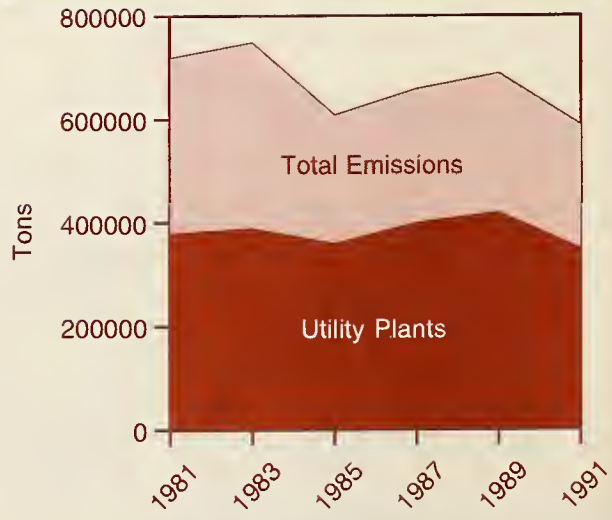
Acid Rain

Acid rain, caused by sulfur and nitrogen oxide emissions, mostly from Midwestern coal-burning power plants, has damaged more than five percent of our surface waters, killing fish and plants. Massachusetts acid rain legislation enacted in 1985, has reduced Massachusetts-produced sulfur pollution by 17 percent. Dramatic additional decreases under the Clean Air Act, particularly by out-of-state power plants, are expected to cut sulfur pollution in half by 2000.

Indoor Air Pollution

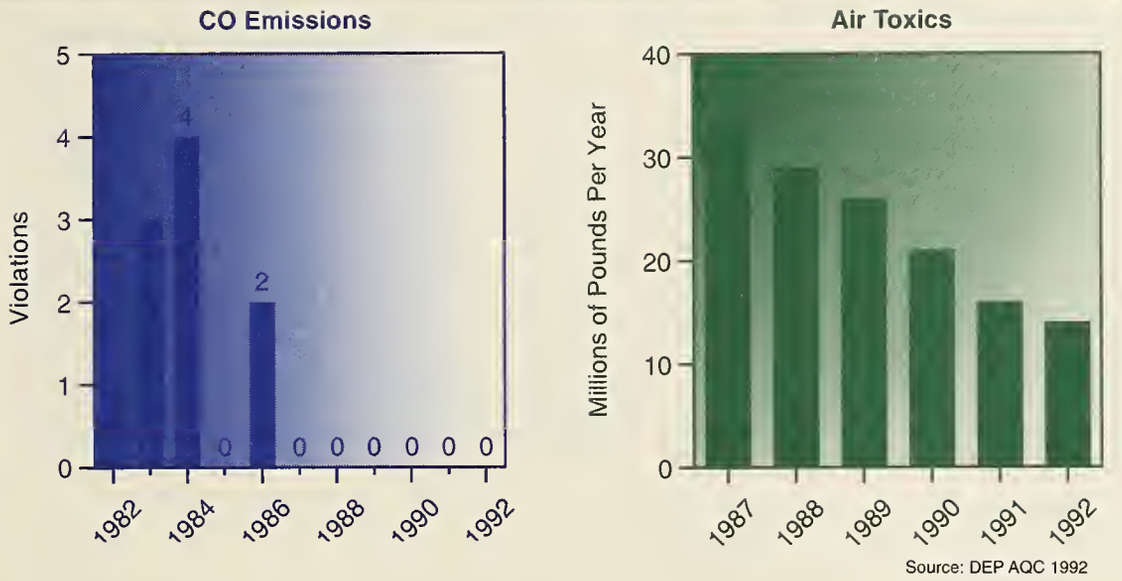
Air pollution is not limited to the outdoors. Many of us spend up to 90 percent of our time indoors. The air in so-called sick buildings can cause headaches, fatigue, nausea, and eye and respiratory irritation. While unhealthful outdoor air is a contributor, indoor air problems typically are linked to inadequate ventilation

Sulfur Emissions Down 17 Percent



Source: DEP AQC 1992

Reduction in CO Emissions and Air Toxics



and indoor contaminants, such as formaldehyde, tobacco smoke, carbon monoxide, bacteria and germs, and radon (which is the second leading cause of lung cancer). The Department of Public Health has established guidelines to measure the adequacy of building ventilation. National estimates suggest that up to 20 percent of buildings may have serious indoor air quality problems.

Future Challenges

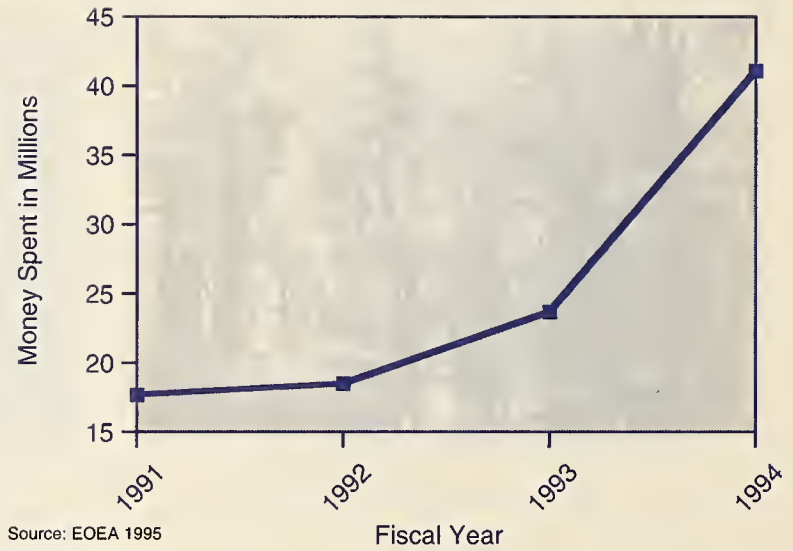
- Reduce the growth in the number of miles driven and the number of vehicle trips.
- Work closely with other northeastern states to find regional solutions to air quality problems including the transport of smog.
- Move toward renewable, cleaner sources of energy and improved energy efficiency.
- Set and enforce rules to ensure that indoor air is safe to breathe.

How You Can Make a Difference

- Get involved with citizen environmental groups which work to promote clean air, alternative transportation modes, or renewable energy resources.
- Use public transportation, join a carpool or vanpool, or consider walking or bicycling to your destination, when possible. Take advantage of a telecommuting program if your employer offers one, or ask for one.
- Ask your employer to organize a ridesharing program offering transit passes to help employees try out public transportation.
- Plan trips to combine several errands, and limit unnecessary "impulse" travel.
- Keep your car properly maintained.
- Don't "top off" your tank when refueling.
- When buying a car, new or used, look for the most fuel-efficient, lowest-emissions car that meets your needs. Inform automobile salespeople and consumer departments that you want cleaner cars.
- Get a free home energy audit (provided by your gas or electric utility) and follow through on installing cost-saving items such as insulation, energy-efficient lights, low-flow showerheads and faucet aerators, and setback thermostats.
- Test your home for radon and take appropriate action if levels exceed EPA-recommended thresholds. ◆

LAND

State Spending on Land Acquisition



Source: EOEA 1995

With a total land mass of just over five million acres, Massachusetts is a relatively small state in size, but its landscape is rich in diversity and natural beauty, stretching from Cape Cod and Cape Ann on the Atlantic coast through river valleys and farmland to the mountain ranges of the Berkshires.

Although Massachusetts is the third most densely populated state in the nation, we have a long tradition of leadership in preserving open space for the benefit of the public and the environment. The Boston Common, the first public park in the nation, was established in 1634; Massachusetts residents formed the world's first private nonprofit land conservation trust in 1891; and the first regional system of public parks was created in the Greater Boston area in 1893. These and other pioneering efforts in land conservation have helped Massachusetts retain its natural character and provide many aesthetic, environmental, and recreational benefits that could easily have been lost.

To continue these early land conservation efforts, state agencies work in partnership with the more than 100 local and regional land trusts, state-wide conservation and sportsmen's groups, local conservation commissions, and municipal agencies to pool resources and professional expertise. This strategy is particularly useful for large or complex acquisitions, but is also effective in transactions of any size or type.

Direct acquisitions are the best-known method for preserving open space, but restrictions are another important method for protecting significant natural resources.

Conservation restrictions, agricultural preservation restrictions, and watershed preservation restrictions prevent development and other activities that may be incompatible with natural resource protection while still allowing private ownership of the property. These restrictions can be purchased by the state, or can be executed by the landowner with the approval of various state officials, depending on the type of restriction.

There are several advantages to restrictions: they cost less than outright acquisitions, help maintain the local tax base, minimize the state's on-going management costs, and still offer important benefits to the public. Today, more than 76,351 acres in Massachusetts are protected through these restrictions.

General Land Statistics

- There are over 904,100 protected acres in Massachusetts, of which more than 528,400 acres are protected by state agencies.
- In FY'94, the Commonwealth spent $41,126,444 on 111 parcels in 62 towns and cities, protecting 8,930 acres; in addition, the Secretary of Environmental Affairs approved conservation restrictions on another 3,703 acres, for a total of 12,633 protected acres .
- Between FY'91 and FY'94, the Commonwealth:

  ✓ spent $101 million on land protection;

  ✓ increased annual funding for land protection by 132 percent (from less than $18 million in FY'91 to more than $41 million in FY'94);

  ✓ protected 43,844 acres (31,301 acres through direct acquisitions and 12,543 acres by conservation restrictions approved by the Secretary of Environmental Affairs); and ·

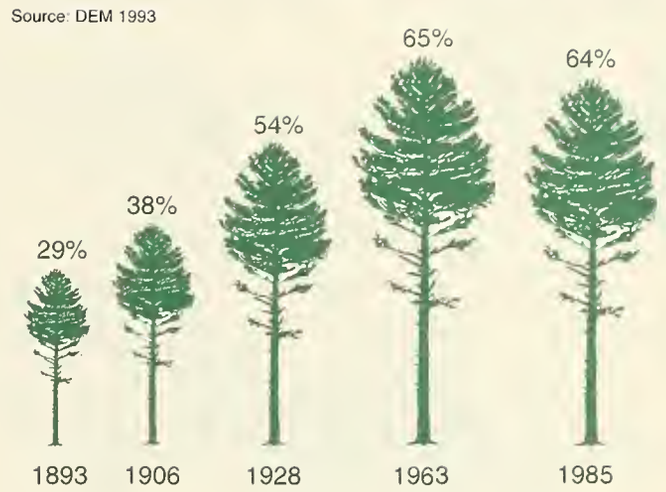
  ✓ protected more new urban park land under the Metropolitan District Commission than had been protected in the previous fifteen years.

Forests and Forestry

While we often think of Massachusetts as an urban state, nearly two thirds (3.2 million acres) of our land is forested. This is almost triple the number of forested acres that existed in Massachusetts in the early 1800s, when large tracts were cleared for timber, fuel, and farming. The mid-19th century migration of many Massachusetts farmers to other regions and the shift from wood to fossil fuels allowed many Massachusetts farms, once abandoned, to become reforested.

About 2.9 million of these forested acres are considered timberland — fertile and accessible areas that can produce wood as a crop. About 84 percent of Massachusetts timberlands are privately owned.

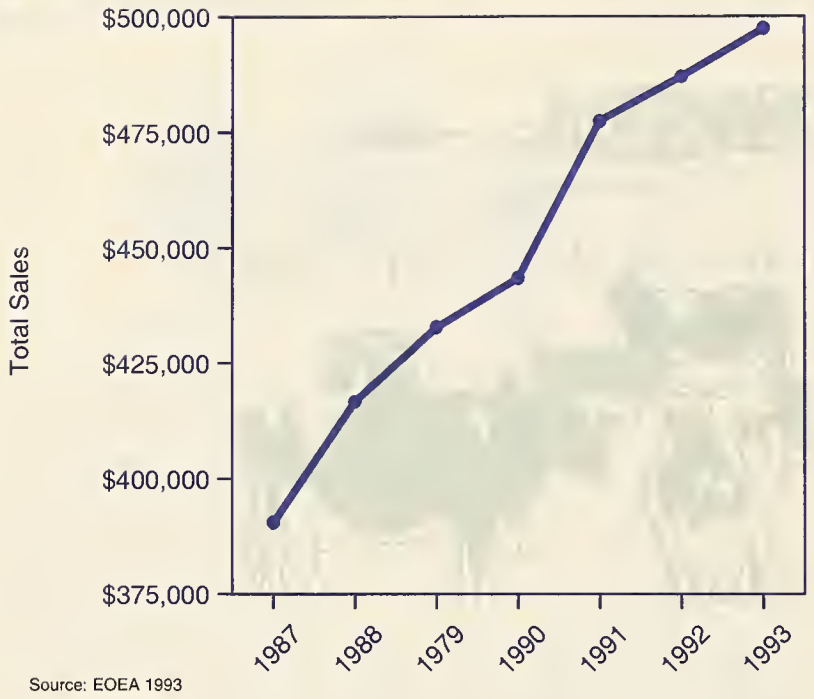
Percent of Total State that is Forested



Forested areas provide recreation, timber, watershed protection, and wildlife habitat. Recreation attracts millions of visitors who enjoy hiking, nature study, horseback riding, cross-country skiing, fishing, and hunting — pastimes that add hundreds of millions of dollars to the state's economy.

Our forest products industry produces 114 million board feet of lumber annually, ships more than $240 million worth of wood products, and employs more than 14,000 people. Massachusetts sawtimber is predominantly white pine, red maple, red oak, hemlock, and sugar maple. At present, tree harvesting practices are sustainable, with tree growth exceeding cutting by almost 3 to 1, and with a growing percentage of large-diameter trees in our forests.

Total Crop and Livestock Sales



Source: EOEA 1993

Urban forestry programs, such as the Mass Releaf shade tree grant program, provide environmental and energy conservation benefits to cities and towns. Since 1989, Mass Releaf has used public and private funding to award grants to municipalities for the planting of 10,000 trees, beautifying our cities and reducing the use of energy for air conditioning.

Agriculture

Farms increased in number from 6,300 in 1983 to 6,900 in 1992, although the average size of those farms decreased from 108 acres to 99 acres over the same period. Although total farming acreage has dropped precipitously since World War II, it has remained steady over the last decade at 680,000 acres. The agricultural industry provides thousands of year-round and seasonal jobs. Like forested land, farmland has secondary benefits: protecting wildlife habitats, recharging watersheds and aquifers, and offering scenic vistas that emphatically say "New England."

Massachusetts ranks second to Connecticut in New England in total cash receipts from farm marketing with $497,383,000 in 1993. Greenhouses and nurseries account for a third of those receipts; cranberries bring in 20 percent; fruits and vegetables, 15 percent; dairy products, 14 percent.

Massachusetts ranks 1st in the nation in cranberry production, 9th in maple syrup, 12th in sweet corn, and 19th in apples. Nearly 500 farmers market directly to consumers at roadside stands while others offer "pick-your-own" or market their products at some 80 seasonal farmers' markets across the state.

A troubled sector of the state's agricultural industry is dairy farming. In the past 10 years, about half of the state's dairy farms have been lost because the price of milk has not kept pace with increasing costs of production for New England farmers, due to unfair federal price regulation which favors large dairy farms in the Midwest. Only 376 dairy farms remain. Current efforts to bolster the dairy industry focus on improving revenues farmers receive from milk sales and diversifying farm products produced at dairies to include more "value-added" products such as gourmet cheese and prepared foods.

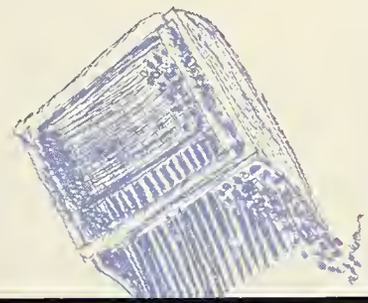
Over the last two decades, consumers and regulators have become more aware of and concerned about the potential health effects of pesticide residues on foods. A federal program establishes safety limits for pesticide residues and tests foods for compliance. Tests conducted in 1991 and 1992 found no violations of residue standards in samples of Massachusetts-grown foods tested here in the state.

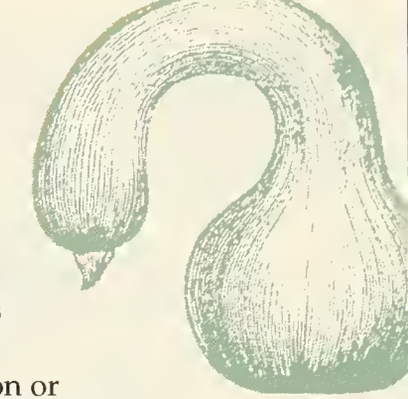
The Massachusetts Pesticide Board exercises its own authority for safe pesticide use while the Massachusetts Department of Public Health has authority to set limits for pesticide residues in processed foods. In several instances, such as the ban of Chlordane by the Pesticide Board in 1985 and the limits placed by the Department of Public Health on alar residues in processed foods in 1986, the Commonwealth has led efforts to end the use of unsafe pesticides or set stringent safety standards, sometimes years ahead of federal regulators.

Since 1985, the DFA Integrated Pest Management program has encouraged research and changes in farm management to reduce agricultural reliance on chemical pesticides. Across the board, Massachusetts farmers have reduced pesticide use by as much as 40 percent. And about 50 farms in the state are using organic farming techniques that are pesticide-free.

Challenges for the Future

- Passage of the $318 million Open Space Bond Bill to ensure that state land preservation programs are continued and expanded.
- Prompt action to stem the loss of dairy farms in the Commonwealth.
- Further development of and wider access to the Commonwealth's computerized Geographic Information System (GIS) to assist private developers and public works project managers in identifying and avoiding sensitive natural areas at the earliest stages of project design.
- Improved coordination of environmental, transportation, economic development, and community infrastructure planning at the state, regional and local levels to preserve open space and increase protection of natural resource areas, without impeding economic growth.
- Ensure continued funding support for state-managed open space resources.





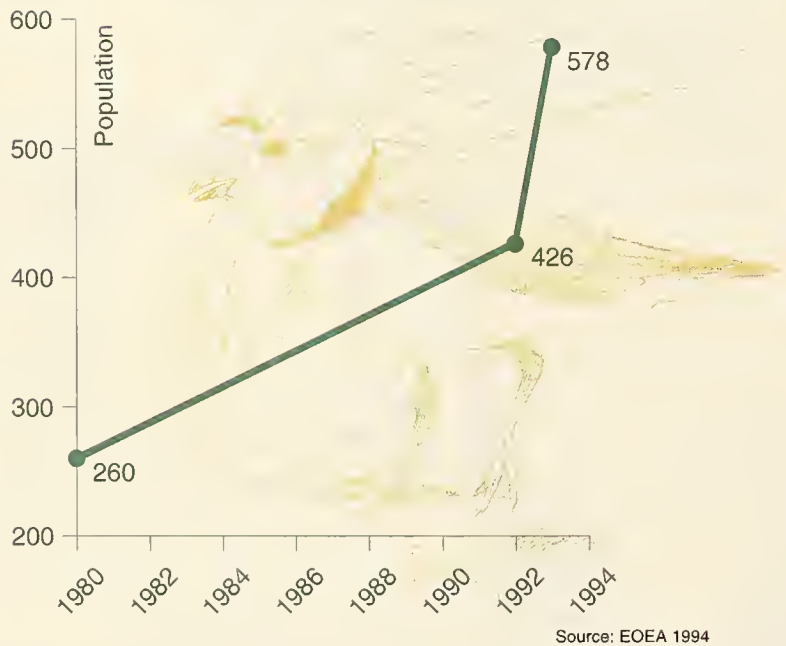
How You Can Make a Difference

- Participate directly in land conservation activities by joining a state park "friends group" or as a member of the many nonprofit land conservation or citizen's environmental organizations in the state.
- Buy Massachusetts-grown products at the supermarket or local farmer's markets.
- Support local and regional planning and land use efforts that discourage sprawl and conserve open space. Encourage your local officials to identify conservation priorities in an up-to-date open space plan.
- Consider placing a conservation restriction on undeveloped property or donating land to state, municipal or not-for-profit land organizations. ◆

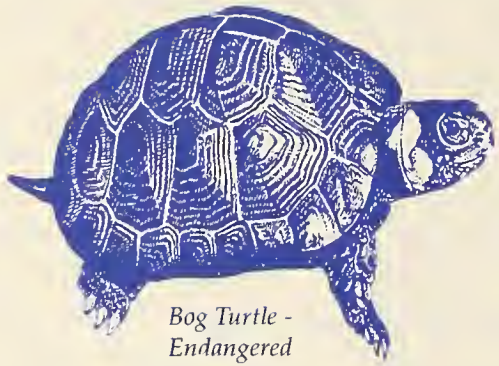
Wildlife

The diversity of our native plant and animal wildlife provides economic as well as ecological value. Forty percent of modern medicines are derived from wild species, mainly plants. Food, wood, fiber, and oils are among the other resources derived from native wildlife and plants. Measurements of the quantity and diversity of such species can forewarn us about issues that may ultimately affect human health: they are often susceptible to the effects of pollution and other human activities.

Piping Plovers Make a Comeback



Source: EOEA 1994



Bog Turtle - Endangered

Outdoor recreation and aesthetics are also greatly enhanced by the presence of a diversity of species.

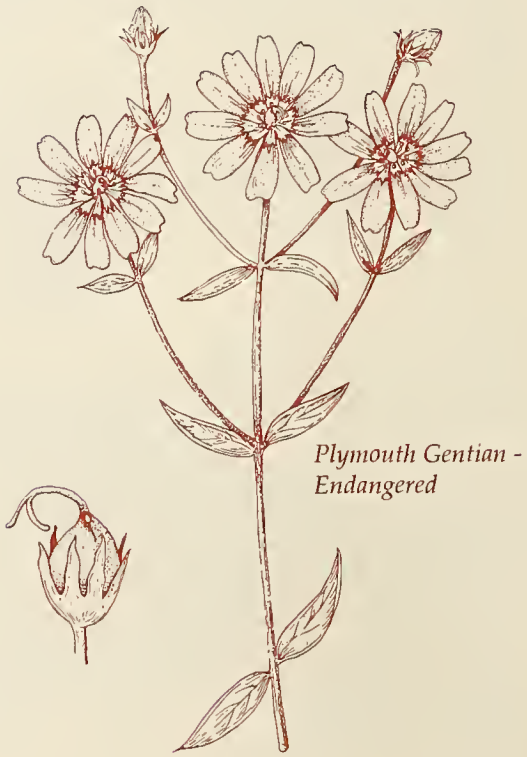
The Natural Heritage & Endangered Species Program (NHESP) of the Division of Fisheries & Wildlife (DFW) inventories and monitors rare plant and animal species and natural communities in the state. The Massachusetts Endangered Species Act of 1990 empowers DFW to take additional action to protect state listed species.

Vanishing Species

To what extent is Massachusetts wildlife threatened? Seven species of animals that once thrived here, such as the Eastern Elk and the Passenger Pigeon, are no longer found anywhere in the world. An additional seventy-two species of native plants and animals no longer occur in Massachusetts, including the lynx and eastern grey wolf. Another forty-six native plants may have disappeared from the state. Many other species listed as Endangered, such as the Indiana bat, have not been seen lately and may be extinct in Massachusetts.

Seventeen percent of the state's vertebrate animals are listed as Endangered, Threatened, or of Special Concern. In some groups, the numbers are worse: 55 percent of our reptiles, and 80 percent of our turtle species, are listed. Of the nearly 1,800 plants native to Massachusetts, 14 percent are on the list, including several plant species that are globally endangered.

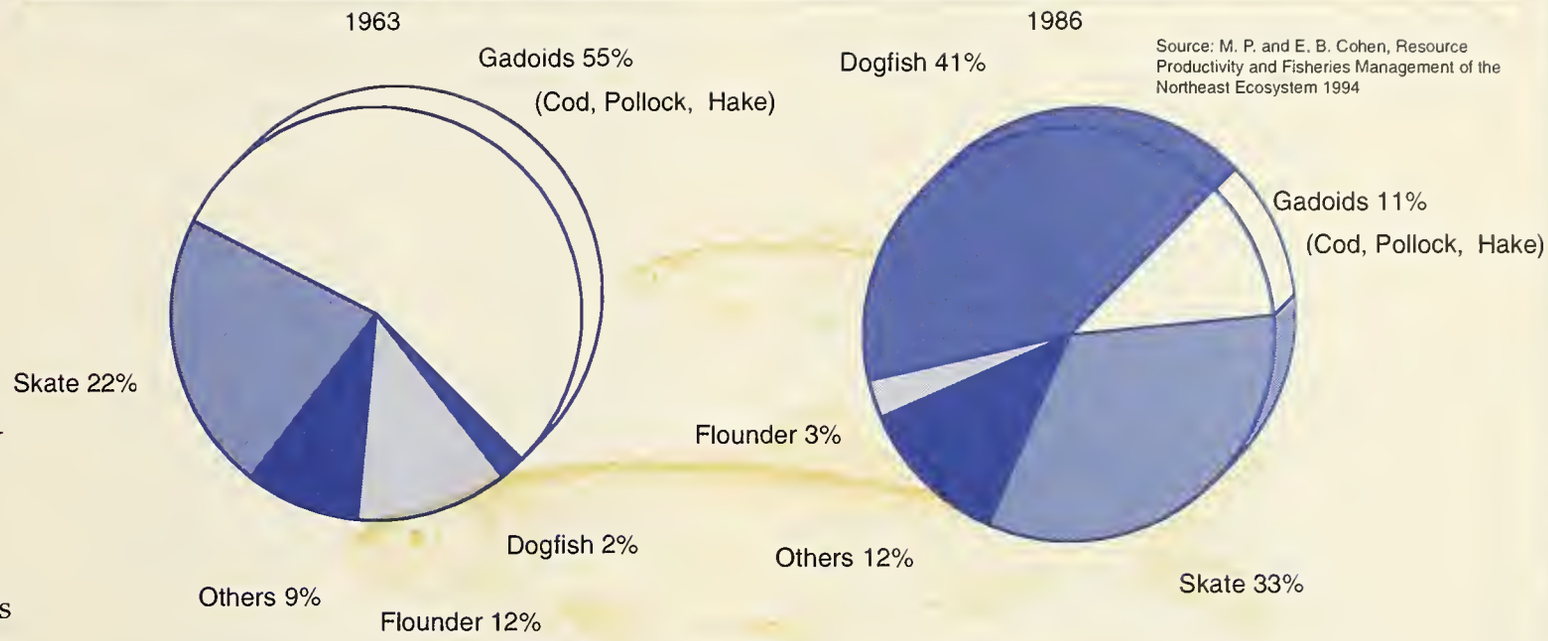
Our state hosts significant populations of several federally endangered birds, including the roseate tern and the piping plover. Due to intensive management efforts, the piping plover has shown encouraging increases in recent years. Despite these gains, there are only about 5,000 plovers alive in the world today — about 600 in



Plymouth Gentian - Endangered

Heath Hen - Extinct

Species Shift on Georges Bank off New England



Source: M. P. and E. B. Cohen, Resource Productivity and Fisheries Management of the Northeast Ecosystem 1994

Massachusetts — far fewer than the numbers of bald eagles, a species that gets considerably more attention.

Most rare species in Massachusetts are dependent on habitats that are themselves threatened or uncommon, such as the coastal-plain kettle pond and the sandplain grassland. These habitats, on Cape Cod, the Islands, and in Plymouth County, are threatened by development, off-road vehicles, trampling, exotic species, and inputs of excessive nutrients from polluted runoff.

Habitat Loss

The greatest threats to wildlife in the state are habitat loss and habitat degradation, although pollutants and toxic substances, and the invasion of exotic species, continue to place stress on the Commonwealth's native species. Habitat protection is the best single means of protecting species. Once destroyed, habitats are not easily restored, because the process can be very expensive and we usually do not know, or have available, all the parts of the ecosystem necessary to re-establish the original conditions.

Bulldozers and steamrollers are not the only threats to habitats. Fragmentation of habitats occurs when forested or other types of areas are divided by roads, housing, and other human-made barriers, even though there may appear to be an abundance of trees or open space. Fragmentation divides and isolates populations of species, making them more vulnerable to stresses and more likely to become locally uncommon.

Protecting wildlife does not necessarily mean halting development — it means planning development with greater regard

for effects on wildlife. Only a small percentage of development projects have acute impacts on rare wildlife species or their habitat; many of these can be redesigned to minimize the impact. In a few cases regulatory monitoring is necessary to protect wildlife.

Today in Massachusetts we have a nature preserve system that will keep lands that have significant natural communities or are biologically diverse in an undisturbed, natural condition.

Wildlife Management

For decades, the Division of Fisheries and Wildlife has managed various wildlife species to increase their populations and provide ecological and recreational benefits. Before 1960, there were fewer than 50 bear in Massachusetts, mostly in the Berkshires. Today the population is estimated to be between 975 and 1175.

At the time of European colonial settlement, the habitat of the wild turkey was widespread in Massachusetts. Clearing for farmland made wild turkeys rare by the 1800s. The last known native turkey in Massachusetts was killed in 1851. DFW began restoring wild turkey in 1972 with 37 wild birds captured in New York state. Today more than 10,000 wild turkey inhabit Massachusetts and are so successfully restored that a limited hunting season has been established.

State wildlife managers also have restored populations of white-tailed deer (50,000), peregrine falcon (three nesting pairs), bald eagle (nine pairs), osprey (more than 200), Atlantic sturgeon, and American burying beetle.

DFW also stocks fish into hundreds of streams, lakes and ponds each year, including three-quarters of a million trout, 10-15,000 northern pike and 1.8 million juvenile Atlantic salmon.

Commercial Fish Stocks

Not far off the Massachusetts coast are some of the most productive fishing grounds in the world. But in recent years, the populations of commercially important groundfish such as cod, haddock and yellowtail flounder have declined by as much as 80 percent. Massachusetts landings dropped to 219 million pounds in 1993, down from a record 633 million pounds in 1948. While a major factor causing this decline is overfishing, environmental degradation, climatic changes and predation by other species are other important factors that have contributed to the disasterous deterioration of the resource.

The National Marine Fisheries Service recently imposed severe fishing limitations to avert the commercial extinction of overfished groundfish resources, and stricter measures are planned. As a result, many of the 20,000 citizens engaged in commercial fishing and related services will find it difficult or impossible to stay in business. Federal financial assistance programs are being implemented with coordination at the state level to help affected fishermen. Temporary limitations imposed on groundfishing, such as larger net mesh size, a moratorium on new groundfish permits, and time limits at sea, were expected to cut the catch significantly, to help stabilize and then increase these populations. Proposals now under consideration may result in no directed fisheries at all on George's Bank and only limited opportunities in the Gulf of Maine.

We have seen, on the other hand, rapid growth in under-utilized species, including skate and spiny dogfish. The long-term health of commercial fishing in New England may well depend on whether consumers can cultivate a taste for these species, and create new markets to assist in the short term survival of the industry while traditional stocks rebuild.

Our nearshore waters support a variety of species, including finfish, shellfish, and lobster. Here too, there are growing concerns that these resources are being stressed. State regulations which complement federal management plans are being enacted to reduce fishing mortality.

Challenges for the Future

- Focus land and water protection efforts on critical habitat areas and natural communities necessary for the well being of species that are rare, threatened, endangered or of special concern.
- Designate Significant Habitat Areas under the Massachusetts Endangered Species Act.
- Develop prevention and control strategies to deal with invasive exotic species such as the water chestnut.
- Implement sensible marine fisheries management measures.

How You Can Make a Difference

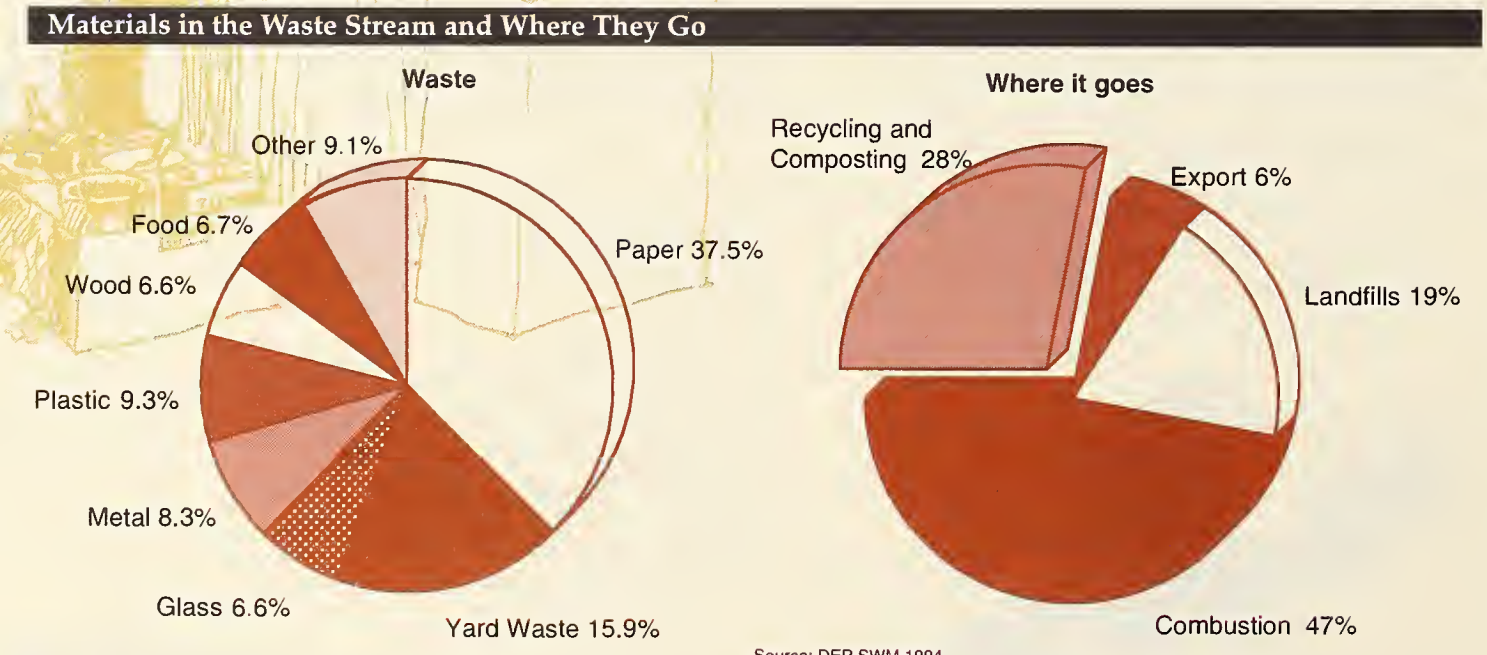
- Get involved with and support citizen environmental groups that work to protect wildlife and their habitat.

- Use the checkoff on your state tax form to contribute to the Natural Heritage and Endangered Species Program (it's tax deductible on your federal return).
- Avoid the use of pesticides by using natural insect predators (ladybugs and green lacewings are available from catalogues and some garden supply outlets), or biological/nontoxic controls such as insecticidal soaps and biodegradable insecticides made with plant extracts.
- If you must use chemical pesticides, never dispose of remnants in the trash or down the drain. These can have severe impacts on wildlife if released into the environment. Call your local department of public works for information about special collection for hazardous materials.
- Keep off-road vehicles away from vegetated areas and nesting sites on beaches, trails and other natural resource areas.
- Don't litter. Participate in community clean up projects. Pick up litter you encounter such as six-pack rings, which can strangle wildlife, and plastic bags that can choke wildlife if swallowed. ◆

WASTE

As the economy of Massachusetts expanded during industrialization, citizens generally accepted the least expensive methods of waste disposal: dumping, open burning, and burial at sea. As consumers, Americans were once encouraged to take pride in the virtues of a "throwaway society" that emphasized, above all else, convenience and a sense of nearly limitless resources.

Today, with a greater understanding of the consequences of human activity on the quality of air, water, land, and living things, and with growing awareness of the need to conserve natural resources, wastes of all kinds are managed in a dramatically different fashion. Legislative mandates call for a waste management system that encourages, in order of preference: waste prevention, reuse, recycling, and, as a last resort, disposal. Many of our once-discarded wastes can be reused or recycled and represent a potential resource just like timber forests and mines.



Source: DEP SWM 1994

Solid Waste

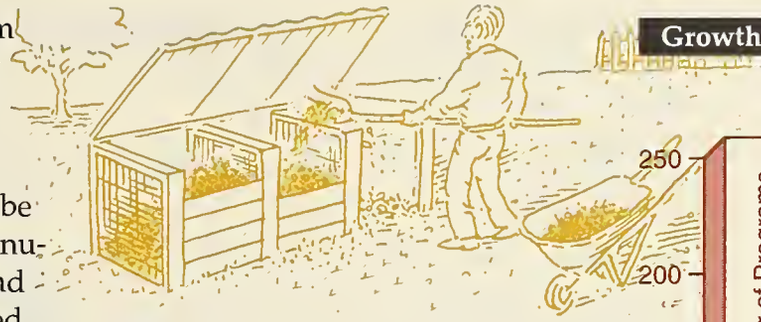
For the past decade, the Commonwealth has emphasized waste prevention, recycling, and composting over reliance on incinerators and landfills in managing solid waste. When the first Solid Waste Master Plan was issued in 1990, the Commonwealth was generating more and more solid waste each year, and limited recycling programs — available in only about half our cities and towns — handled a mere 10 percent of our trash.

The Commonwealth set aggressive goals: no further growth in waste generation; recycling and composting of 23 percent of municipal solid waste by 1992, 34 percent by 1996, 46 percent by 2000; and a sharp decrease in waste going to landfills.

By 1994, Massachusetts residents and businesses had achieved a 28 percent recycling and composting rate. That represents almost two million tons of trash diverted from landfills and incinerators each year.

For most cities and towns, recycling and composting are now routine. In 1990, there were only 190 municipal recycling programs. By the end of 1994, 341 of the 351 Massachusetts communities had some

type of recycling program, ranging from numerous drop-off centers operated by local volunteers to community-wide curbside recycling collection.



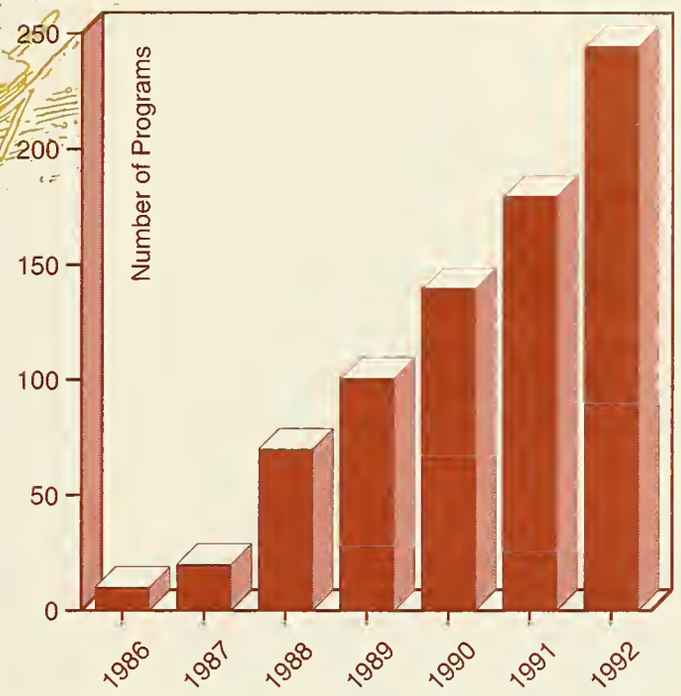
For recycling to truly work, there must be an adequate supply of materials for manufacturers, as well as an adequate demand by the public and businesses for recycled products. A comprehensive Ten Point Recycling Plan, initiated in 1994 and funded with $5 million in unclaimed bottle deposits, marked a significant advancement in the state's recycling infrastructure. The money is being used to develop programs to encourage the collection and processing of recycled materials, as well as the remanufacturing and procurement of recycled products. Since 1990, nearly $10 million worth of recycling equipment, including household collection bins, roll-off containers for drop-off centers, home composting bins, and recycling trucks, has been provided to municipalities.

To stimulate demand for recycled materials, the Commonwealth has taken several key steps, including:

- Governor Weld's "Clean State" initiative that calls on state agencies to use their purchasing power to buy more goods containing recycled material. State purchase of recycled-content goods jumped from $2.3 million in 1992 to $8.2 million in 1994, and continues to grow rapidly.
- The "Governor's Packaging Challenge", which in 1994, was met by 33 companies that use at least 25-percent post-consumer recycled material in their packaging.

Growth in Community Composting

Source. DEP DSWM 1994



The 1994 Solid Waste Master Plan Update projected that, by the year 2000, incinerators would handle no more than 50 percent of our trash and that landfills would take in only 4 percent (compared to 42 percent in 1990). DEP staff now are negotiating closure schedules with communities with unlined landfills, many of which pose significant documented threats to groundwater.

Hazardous Waste

Hazardous wastes are produced in many industrial processes and commercial operations such as electroplating, electronics manufacturing, dry cleaning, photoprocessing, and autobody repair. Hazardous waste also comes from chemicals used in the home, such as solvents, paints, and insecticides.

Over the last few years, Massachusetts has generated as much as 200,000 tons of hazardous wastes a year, the majority of which has then been shipped out of state for disposal. In the last 12 years efforts to

site a half dozen proposed hazardous waste treatment or disposal facilities in Massachusetts have failed, although several hazardous waste recycling facilities have been sited.

Massachusetts regulations require a license for anyone who transports, treats, stores, or disposes of hazardous wastes, and registration of businesses that generate wastes. Currently, there are about 1,500 permitted hazardous waste recyclers, 500 large quantity generators, 3,000 small quantity generators, 160 transporters, and 28 treatment, storage, and disposal facilities.

The Massachusetts Toxics Use Reduction Act, passed in 1989, encourages industries to change their production processes to save money and reduce chemical waste. About 700 of the largest chemical users must submit annual reports to the Department of Environmental Protection (DEP) on chemicals used, amounts wasted during production, where those wastes go, and how the companies plan on reducing waste. The latest data show that toxics use dropped nearly 20 percent between 1990 and 1994, while the volume of chemicals ending up as waste product dropped by 14 percent.

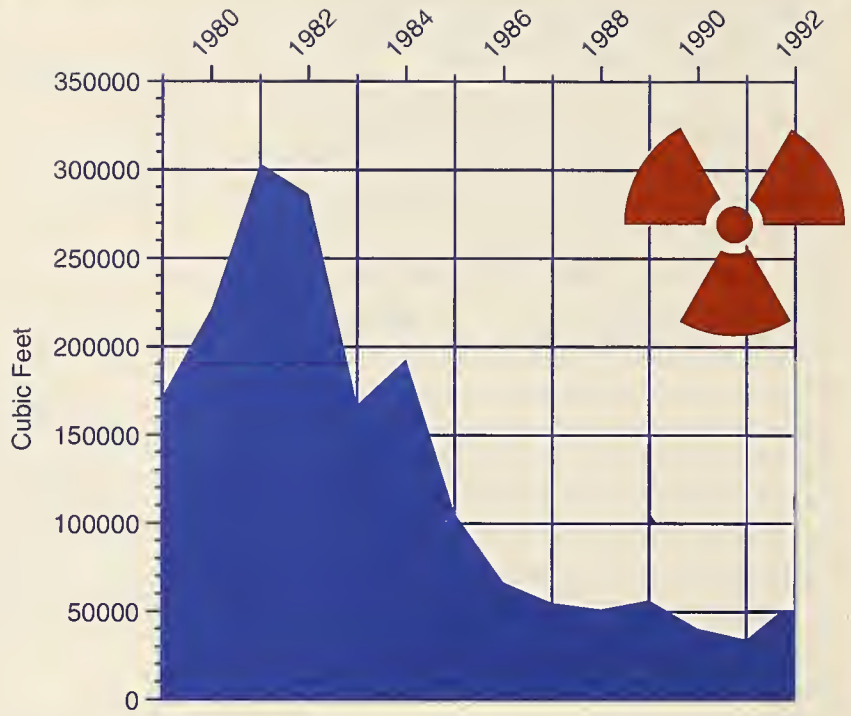
Companies get help from the state Office of Technical Assistance (OTA), and the Toxics Use Reduction Institute at UMASS/Lowell. Providing free, non-regulatory technical assistance, OTA's staff of trained engineers and other professionals has identified many cost-effective waste prevention opportunities at the 541 companies visited since 1990.

Hazardous Waste Site Cleanups

Parcels of land containing hazardous materials, such as gasoline or toxic chemicals, if left uncontrolled, can endanger drinking water, ecosystems, and public safety. Economic development suffers, too, because uncertainties about cleanup costs and liability may make investors reluctant to redevelop contaminated properties in urban areas. Instead, businesses often choose to build facilities in "greenfield" suburban and rural areas, encouraging sprawl, leaving prime urban property underused or abandoned, and moving jobs out of our cities.

Spills of hazardous materials demand immediate action, especially when they may cause fires or explosions, or imminently threaten drinking water. Every year, DEP waste site cleanup staff respond to more than 2,000 spills. Since the mid-1980s, more than 27,000 spills have been cleaned up.

Massachusetts Low Level Radioactive Waste Disposal Volume



Source: U.S. DOE 1992

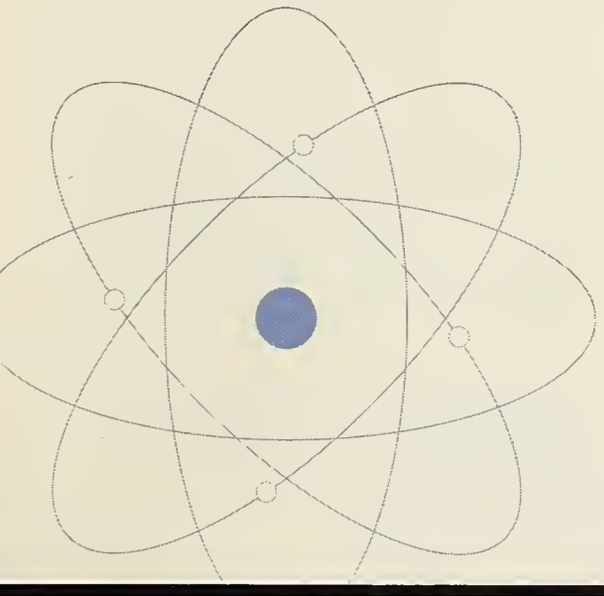
Today there are more than 6,500 suspected and confirmed hazardous waste disposal sites, including 30 federal Superfund sites. To date, the Commonwealth has spent about $80 million on assessments and cleanups, while the private sector has invested hundreds of millions more.

In 1992 Governor Weld signed into law a major revision to the state waste site cleanup law, Chapter 21E. These changes reflect a new and more effective approach to getting sites cleaned up that relies to a much greater extent on the private sector.

Now, DEP staff no longer directly oversee work at most sites. Instead, property owners hire licensed environmental professionals to evaluate sites and manage cleanup work. DEP monitors these cleanups and concentrates its own cleanup work only on sites of utmost significance to public health or where the people potentially responsible for the problem cannot be found, lack the resources to do the job, or contest legal responsibility to clean up the site. This has resulted in speedier cleanups, and more effective use of state resources.

Low-Level Radioactive Waste

Hundreds of Massachusetts businesses and institutions are licensed to use radioactive materials, and about 100 produce low-level radioactive waste (LLRW). Use of radioactive materials is key to more than $3 billion worth of economic activity annually in Massachusetts and provides jobs for some 36,000 people.



Low-level radioactive waste produced in Massachusetts, which had been shipped for disposal elsewhere — South Carolina, Nevada, and Washington state — has dropped steadily over the past decade. Nevada and Washington stopped taking Massachusetts LLRW at the end of 1992; since June 30, 1994, South Carolina has also refused our LLRW. Massachusetts must either find another state willing to accept our radioactive trash or build our own facility.

We've chosen a dual path, following recent decisions by the state Low-Level Radioactive Waste Management Board. We've now begun to look for a suitable in-state site for a disposal facility, while at the same time continuing to seek long-term disposal arrangements at new facilities being developed by other states and regions.

Challenges for the Future

- Close unlined, leaking solid waste landfills that threaten groundwater.
- Develop improved markets for material collected in community recycling programs.
- Reduce toxic waste byproducts by 50 percent by 1997.
- Resolve liability concerns in the development and banking communities about investing in voluntary cleanups of hazardous waste disposal sites.
- Find an environmentally safe and economical low-level radioactive waste disposal site, either here or in another state.

How You Can Make a Difference

- Get involved with and support citizen environmental groups working to promote pollution prevention and recycling.
- Get active in community and workplace recycling programs. Ensure healthy demand for recycled materials by purchasing products made with recycled material.
- Set up a backyard compost bin to turn your yard waste and kitchen scraps into rich soil for gardens and landscaping.
- Buy environmentally safer, less toxic or non-toxic alternatives to cleaners, solvents, drain openers, oil-based paints and stains, paint strippers, and automobile antifreeze.
- Never toss household hazardous wastes in the trash or pour them down the drain. Bring them to community collection centers, generally scheduled on special days. ◆

SERVING THE CITIZEN

The state's environmental agencies offer a multitude of programs and services relating to our natural resources. EOEA and its agencies permit the prudent use of our natural resources by citizens and business, provide recreational access to and information about these resources, and restore, preserve and enhance the condition of these resources for the future. The environmental agencies of the Commonwealth are not unlike the managers of a financial trust: the "asset" we manage and seek to enhance is the natural environment, and our "customers" are the citizens and businesses who are dependent on these natural resources for their livelihood and recreational pursuits. EOEA and its agencies seek to be responsive to the customer's needs, while never losing sight of our primary purpose — to act as steward of the Commonwealth's precious and often fragile natural resources.

Education

The Secretaries' Advisory Group for Environmental Education created by EOEA brings together educators from state government, nonprofit groups, academia, and industry. Serving in an advisory capacity to the Secretary of Environmental Affairs and The Secretary of Education, the group contributes its combined expertise in environmental education to the environmental literacy goals of both secretariats.

EOEA agencies also provide other wide-ranging educational services, including:

- Interpretive programs, literature, exhibits and self-guided tours of historic sites.
- A solid waste management resource guide.
- An environmental education resource guide for teachers.
- Aquatic resource education (teaches fishing skills, safety techniques, outdoor ethics and aquatic ecology).
- Environmental education awareness workshops, seminars, and media outreach.
- Compliance assistance seminars and expert technical assistance for businesses and industry.
- A speakers bureau, making experts available to address meetings, classes and interest groups.
- Publications that focus on specific environmental needs and issues.

Recreation

The Commonwealth's parks system — from the Charles River Esplanade to Leland Beach on Martha's Vineyard, from Plymouth Rock to Mount Greylock in the Berkshires — offers exceptional recreation, scenery, wildlife, and history. Massachusetts state parks are a destination for millions of citizens and tourists — about 19 million visits were logged in 1993 alone — who come to enjoy outstanding forests and wildlife areas, beaches and ball fields, ice skating rinks and pools, museums and amphitheaters, and miles of pathways for joggers and cyclists. Almost 300,000 citizens hold hunting and/or fishing licenses.

Public use of state forests, parks, wildlife management areas, and other open space translates into direct economic benefits for the state and local communities. A 1991 national survey found that outdoor recreational visits in Massachusetts result in annual spending of nearly $1 billion.

In the past three years a number of improvements have occurred in the operation of state park facilities:

- DEM expanded the swimming season from 8 weeks to 10 weeks at many of its facilities; MDC extended the opening of sanitary facilities at various beaches from 12 to 20 weeks and lengthened the skating season as well.
- DEM now has more than 100 staffed recreation areas and, in the last four years, has spent nearly 40 million dollars to improve park infrastructure; 40 DEM parks now offer interpretive programs.
- MDC expanded or introduced educational program offerings such as ice fishing on the Charles, nature walks, and interpretation services.

- Public-private partnerships, such as "Friends Groups," assist parks managers with physical maintenance, supplement agency educational programs, and help raise funds for special activities.

Permit Streamlining and Regulatory Reform

Since January, 1991 when it adopted a money-back guarantee on timely service to customers, the Department of Environmental Protection (DEP) has received more than 15,000 permit applications, and processed 99 percent of them on time. In 1994 two new programs were launched that further streamline permitting and encourage innovation for greater environmental and economic benefit.

The Massachusetts Permit Assistance Program, a joint effort with the Massachusetts Office of Business Development, helps companies who wish to locate or expand operations in the state by creating user-friendly, one-stop centers where project developers can get a list of all required state permits and a "road map" of permitting procedures. The second initiative, the Strategic Envirotechnology Partnership (STEP), focuses on promoting and implementing innovative environmental technologies by streamlining the regulatory process and providing financial assistance. STEP is a cooperative effort by EOEA, the Executive Office of Economic Affairs and the University of Massachusetts.

Technical Assistance

Since 1990, more than 7,000 businesspeople, consultants, attorneys and municipal officials have attended seminars conducted by DEP designed to provide technical assistance to those seeking permits and to explain changes in regulatory programs. In regular surveys, nearly 80 percent of those who deal with DEP rate their experience as good or excellent.

DEP operates four regional service centers, which serve annually about 13,000 callers and 5,000 walk-in visitors, where customers can find the information and help they need. DEP also offers InfoLine, a toll-free service for general information, permit application kits, and referral to DEP technical experts . InfoLine has already served nearly 35,000 callers.

The Office of Technical Assistance is a non-regulatory agency that provides free advice to industries on how to make cost-effective changes in their production practices to reduce or eliminate the use and waste of toxic substances. OTA has assisted more than 500 companies since its inception in 1989.

Environmental Equity

EOEA and its agencies are committed to achieving environmental equity in Massachusetts, so that all citizens share equally in the benefits of a clean environment and in enjoyment of our natural resources, regardless of race, ethnicity, or income.

DEP now is coordinating its equity efforts with the EPA Environmental Justice Office, recruiting more minorities for DEP jobs and internships, and examining communities at risk to ensure environmental safeguards.

Both the MDC and DEM play key roles in providing recreational opportunities to underserved urban residents. DEM's urban heritage parks in 8 cities offer recreation and education, while swimming pools provide cooling relief from summer heat. In the Greater Boston area, a new MDC playground rehabilitation program commits funding over the next five years. In 1993, MDC launched a pilot program with the Dorchester YMCA to recruit, train, certify, and hire members of 32 ethnic and linguistic minorities as lifeguards at 11 MDC pools and beaches. Now, MDC plans to extend that effort on the North Shore. Also in 1993, MDC teamed with Friends of the Esplanade, Northeastern University, and Action for Greater Boston Development to create a youth conservation corps with ethnic and linguistic diversity.

EOEA agencies are working to make sure our parks and recreation facilities meet the Americans with Disabilities Act (ADA) guarantee of access to public facilities for all citizens. And we are moving beyond access alone by training park staff to assist disabled visitors. By the end of 1995, all public programs in state parks and recreational facilities will be accessible to the disabled.

How We Pay For It

EOEA operational activities are funded each year through a combination of state General Fund monies, dedicated funds (whose revenues can be used only for specifically named purposes), trust funds, and federal grants or matching funds.

Historically, about three percent of the Commonwealth's discretionary operating budget, and about one percent of overall state spending, is committed directly to Environmental Affairs. In fiscal 1995 state environmental agencies received $162 million in operating funding. In addition, the fiscal year 1995 General Appropriations Act provided $40 million to mitigate the impact of sewer rate increases.

Bond funds available from one fiscal year to the next address diverse capital spending needs. Currently authorized legislation allows spending in a number of areas, including open space acquisition, watershed protection, park and facility rehabilitation, subsidized loans for construction of wastewater treatment plants, hazardous waste site cleanup, solid waste management, repairs to parkways and bridges, and siting for a low level radioactive waste disposal site. In fiscal 1994 state environmental agencies spent over $153 million on these capital projects.

New capital investment in the sewage treatment infrastructure came in 1992 with legislative approval of a State Revolving Loan Fund (SRF) under the provisions of the 1987 Federal Clean Water Act. The Act authorized funds to be allocated to states through annual capitalization grants through federal fiscal year 1994. Massachusetts legislators appropriated the required 20 percent state match for federal funds, and went beyond the Clean Water Act to make loans available at half the market rate for municipalities with critical water pollution control projects.

For More Information

The Massachusetts Executive Office of Environmental Affairs (EOEA) directs and coordinates all state policies aimed at preserving, protecting and regulating the natural resources and the environmental integrity of the Commonwealth. EOEA is headed by the Secretary of Environmental Affairs, who is a member of the governor's cabinet. The office includes experts on issues such as open space, waste management, and water supply, who set broad policy goals for all EOEA agencies and coordinate related programs within the individual departments. For educational materials and publication information, call (617) 727-9800 x218.

Aside from the Executive Office, there are five separate departments in the Secretariat, each headed by a commissioner who reports to the Secretary:

Department of Environmental Protection (DEP)

DEP is responsible for ensuring clean air and water, the safe management and disposal of solid and hazardous wastes, the timely cleanup of hazardous waste sites and spills, and the preservation of wetlands and coastal resources. Main number: (617) 292-5500.

DEP InfoLine:1-800-462-0444 (from 508/413 area codes) or (617) 338-2255 (from 617 area code or out-of-state)

Western Regional Service Center, Springfield: (413) 784-1100 ext 214

Central Regional Service Center, Worcester: (508) 792-7683

Northeast Regional Service Center, Woburn: (617) 932-7677

Southeast Regional Service Center, Lakeville: (508) 946-2714

Used Oil Hotline: (617) 556-1022

Air Quality Report: 1-800-882-1497

To report environmental crimes — Environmental Strike Force: (617) 556-1000

Department of Environmental Management (DEM)

DEM exercises care and oversight for the natural, cultural , and historic resources within the state forests, parks, recreation facilities, public lands and waters that have been entrusted to its care. DEM provides quality public recreational opportunities and education programs which are environmentally sound, affordable and accessible to all citizens. DEM directly manages over 280,000 acres of land; maintains public access to its resources in rural and suburban areas of the Commonwealth; and enhances the quality of these resources through statewide resource planning protection, and regulatory programs. Main numbers: (617) 727-3180 and toll free within Massachusetts 1-800-831-0569.

DEM Division of Forests and Parks Regional Headquarters:

Berkshires: (413) 442-8928

Connecticut River Valley: (413) 545-5993

Central Region: (508) 368-0126

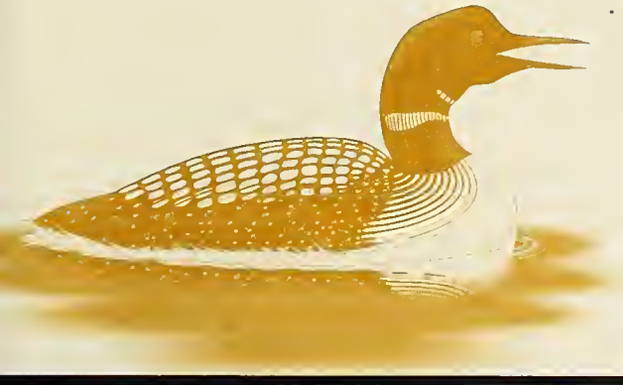
Northeast: (508) 369-3350

Southeast: (508) 866-2580

Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE)

DFWELE is charged with the Commonwealth's stewardship responsibility over marine and freshwater fisheries, wildlife species, plants and natural communities. The Department maintains and improves the state's rivers, streams, lakes, ponds, coastal waters and wild lands through programs of research, education, restoration development and land acquisition. DFW directly manages a total of 80,000 acres of land in the Commonwealth. It also enforces all environmental laws relating to fishing, hunting, hazardous waste, illegal dumping, boating and recreational vehicles. Main number: (617) 727-1614.

Riverways Program: (617) 727-1614



Division of Marine Fisheries: (617) 727-3193

Division of Fisheries and Wildlife: (508) 792-7270

Division of Environmental Law Enforcement: (617) 727-3905

To report environmental crimes, hunting and fishing violations: 1-800-632-8075

Hunter Education Bureau: (508) 792-7434

Boating and Recreational Vehicle Bureau: (508) 790-9360

Public Access Board (state boat access sites): (617) 727-1843

Information on fishing in Massachusetts: 1-800-ASK-FISH

Department of Food and Agriculture (DFA)

DFA supports, promotes and enhances the long-term viability of Massachusetts agriculture for the benefit of the state's economy and environment. Main number: (617) 727-3000.

Public Information: (617) 727-3000 x170

Marketing: (617) 727-3018

Lancaster (land use): (508) 792-7711

Pesticide Bureau: (617) 727-3020

Metropolitan District Commission (MDC)

The MDC is a multi-service agency responsible for the management of a 17,000 acre urban Metropolitan Parks System, a 330,000 acre watershed and reservoir system that provides pure water for 2.5 million people in the Metropolitan Boston area, and 700 lane miles of scenic parkways. The Parks System comprises some of Metropolitan Boston's most scenic and historic sites, including but not limited to the Charles River Esplanade and the Blue Hills Reservation. In addition, the Parks System affords residents and visitors unparalleled recreational opportunities with beaches such as Revere and Nantasket, over twenty skating rinks, nineteen swimming pools, numerous ball fields, stadia and extensive bicycle and jogging paths. The Commission is committed to preserving the region's unique landscapes by acquiring and protecting park lands, river corridors and coastal areas of great scenic beauty and environmental significance. Main number: (617) 727-1300.

Additional EOEA resources:

- Office of Technical Assistance (OTA): (617) 727-3260
- Massachusetts Coastal Zone Management Office (MCZM): (617) 727-9530
- Impact Review Unit for the Massachusetts Environmental Policy Act (MEPA): (617) 727-5830
- Division of Conservation Services (DCS): (617) 727-9800
- Water Resources Commission (WRC): (617) 727-3160
- Hazardous Waste Siting Council: (617) 727-6930 ◆

Notes

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Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202